



Z00607MA

STANDARD

0.8A TRIACs

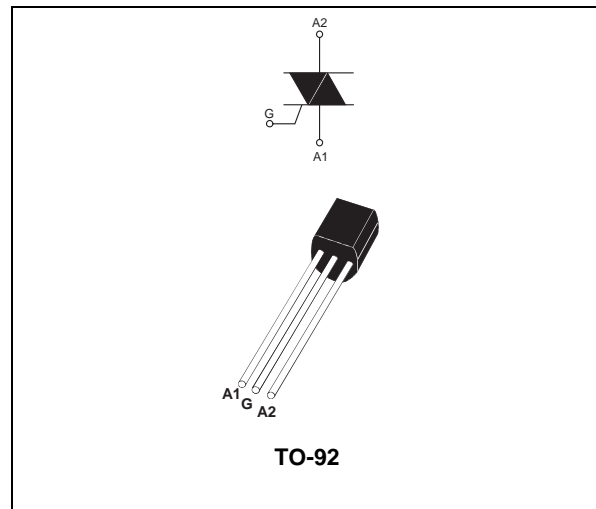
MAIN FEATURES:

| Symbol | Value | Unit |
|-------------------|-------|------|
| $I_{T(RMS)}$ | 0.8 | A |
| V_{DRM}/V_{RRM} | 600 | V |
| $I_{GT}(Q_1)$ | 5 | mA |

DESCRIPTION

The Z00607MA is suitable for low power AC switching applications, such as fan speed, small light controllers...

Thanks to low gate triggering current, it can be directly driven by microcontrollers.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | | Value | Unit | |
|--------------------|---|-------------------------------|---------------------------|--------------------------------|------------------------|
| $I_{T(RMS)}$ | RMS on-state current (full sine wave) | | $T_I = 50^\circ\text{C}$ | 0.8 | A |
| I_{TSM} | Non repetitive surge peak on-state current (full cycle, T_j initial = 25°C) | $F = 50\text{ Hz}$ | $t = 20\text{ ms}$ | 9 | A |
| | | $F = 60\text{ Hz}$ | $t = 16.7\text{ ms}$ | 9.5 | |
| I^2t | I^2t Value for fusing | $t_p = 10\text{ ms}$ | | 0.45 | A^2s |
| di/dt | Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$ | $F = 120\text{ Hz}$ | $T_j = 110^\circ\text{C}$ | 20 | $\text{A}/\mu\text{s}$ |
| I_{GM} | Peak gate current | $t_p = 20\text{ }\mu\text{s}$ | $T_j = 110^\circ\text{C}$ | 1 | A |
| $P_{G(AV)}$ | Average gate power dissipation | | $T_j = 110^\circ\text{C}$ | 0.1 | W |
| T_{stg} T_j | Storage junction temperature range Operating junction temperature range | | | - 40 to + 150 - 40 to + 110 | $^\circ\text{C}$ |

Z00607MA

ELECTRICAL CHARACTERISTICS (T_j = 25°C, unless otherwise specified)

| Symbol | Test Conditions | Quadrant | | Value | Unit |
|--------------------------|---|--------------------|------|--------|------|
| I _{GT} (1) | V _D = 12 V R _L = 30 Ω | I - II - III IV | MAX. | 5 7 | mA |
| V _{GT} | | ALL | MAX. | 1.3 | V |
| V _{GD} | V _D = V _{DRM} R _L = 3.3 kΩ T _j = 110°C | ALL | MIN. | 0.2 | V |
| I _H (2) | I _T = 200 mA | | MAX. | 5 | mA |
| I _L | I _G = 1.2 I _{GT} | I - III - IV | MAX. | 10 | mA |
| | | II | | 20 | |
| dV/dt (2) | V _D = 67 %V _{DRM} gate open T _j = 110°C | | MIN. | 10 | V/μs |
| (dV/dt) _c (2) | (dI/dt) _c = 0.35 A/ms T _j = 110°C | | MIN. | 1.5 | V/μs |

STATIC CHARACTERISTICS

| Symbol | Test Conditions | | Value | Unit | |
|--------------------------------------|--|------------------------|-------|------|----|
| V _{TM} (2) | I _{TM} = 1.1 A t _p = 380 μs | T _j = 25°C | MAX. | 1.5 | V |
| V _{to} (2) | Threshold voltage | T _j = 110°C | MAX. | 0.95 | V |
| R _d (2) | Dynamic resistance | T _j = 110°C | MAX. | 420 | mΩ |
| I _{DRM} I _{RDM} | V _{DRM} = V _{RRM} = 600 V | T _j = 25°C | MAX. | 5 | μA |
| | | T _j = 110°C | | 0.1 | mA |

Note 1: minimum I_{GT} is guaranteed at 5% of I_{GT} max.

Note 2: for both polarities of A2 referenced to A1

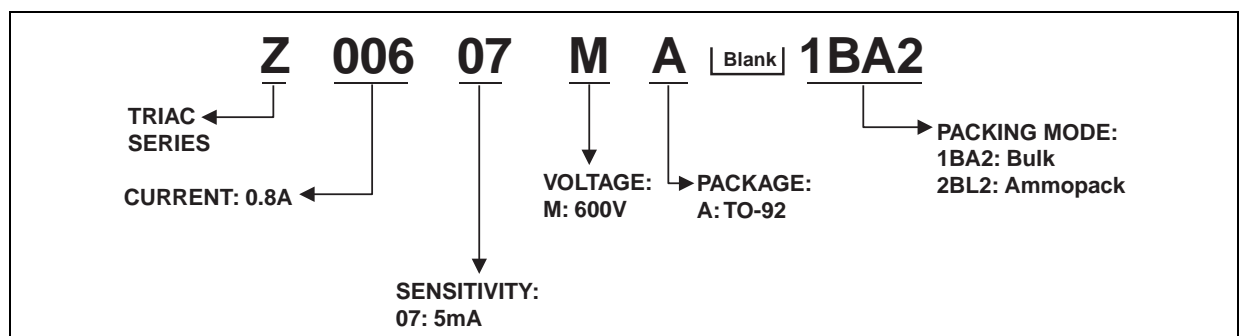
THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|----------------------|-----------------------|-------|------|
| R _{th(j-l)} | Junction to lead (AC) | 60 | °C/W |
| R _{th(j-a)} | Junction to ambient | 150 | °C/W |

PRODUCT SELECTOR

| Part Number | Voltage | Sensitivity | Type | Package |
|-------------|---------|-------------|----------|---------|
| Z00607MA | 600 V | 5 mA | Standard | TO-92 |

ORDERING INFORMATION



OTHER INFORMATION

| Part Number | Marking | Weight | Base quantity | Packing mode |
|---------------|----------|--------|---------------|--------------|
| Z00607MA 1BA2 | Z00607MA | 0.2 g | 2500 | Bulk |
| Z00607MA 2BL2 | Z00607MA | 0.2 g | 2500 | Ammopack |

Fig. 1: Maximum power dissipation versus RMS on-state current (full cycle).

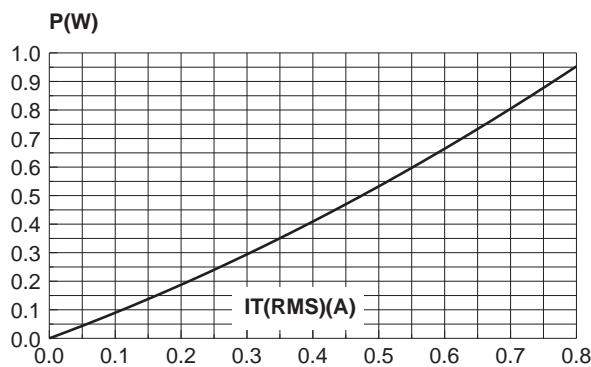


Fig. 2: RMS on-state current versus ambient temperature (full cycle).

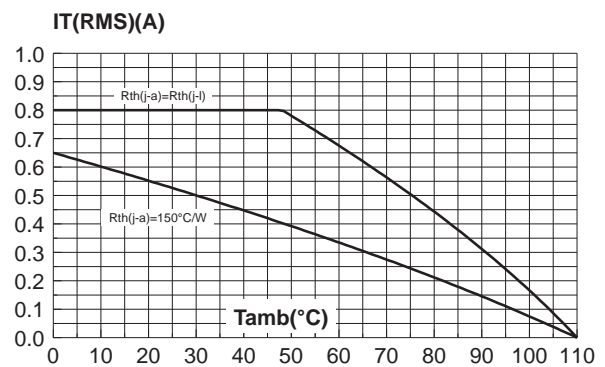


Fig. 3: Relative variation of thermal impedance junction to ambient versus pulse duration.

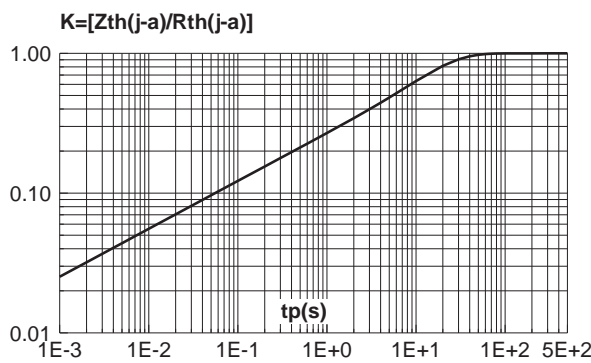


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

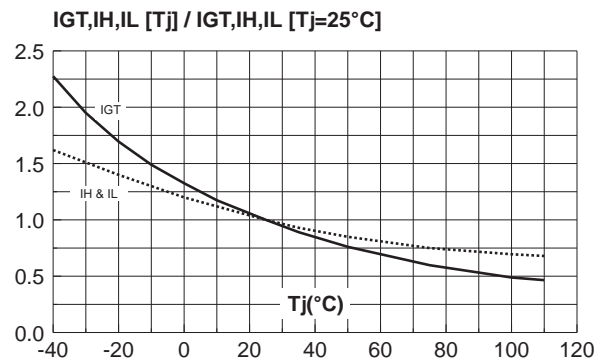


Fig. 5: Surge peak on-state current versus number of cycles.

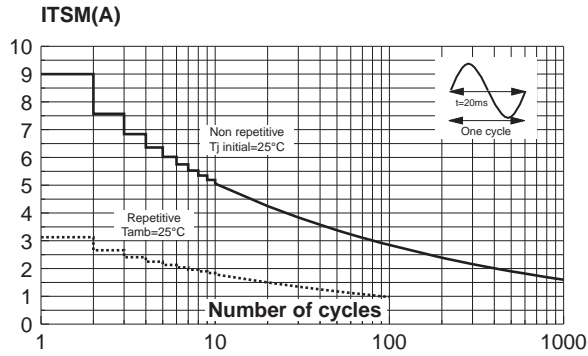


Fig. 7: On-state characteristics (maximum values).

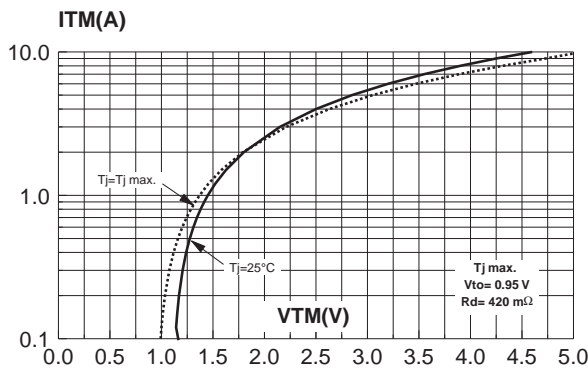


Fig. 9: Relative variation of critical rate of decrease of main current versus junction temperature.

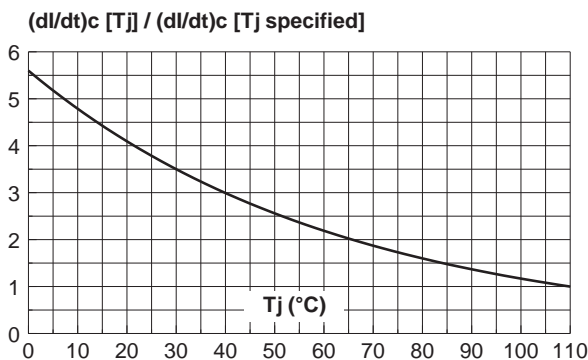


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

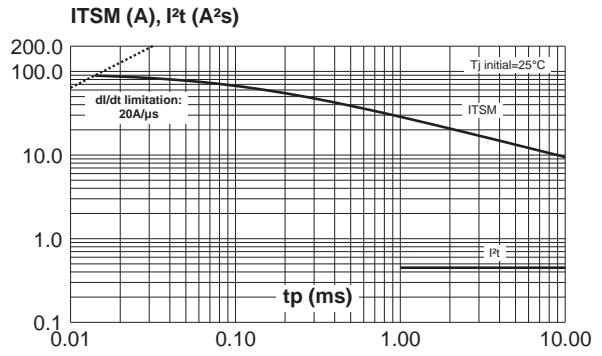
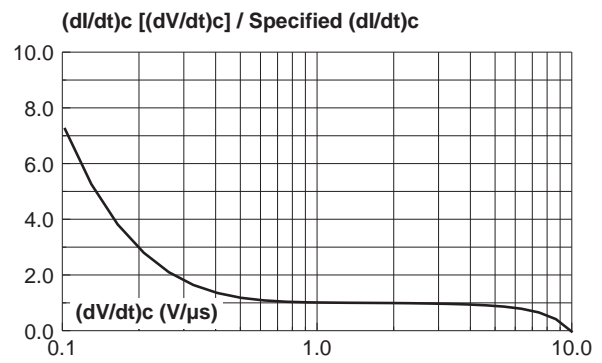
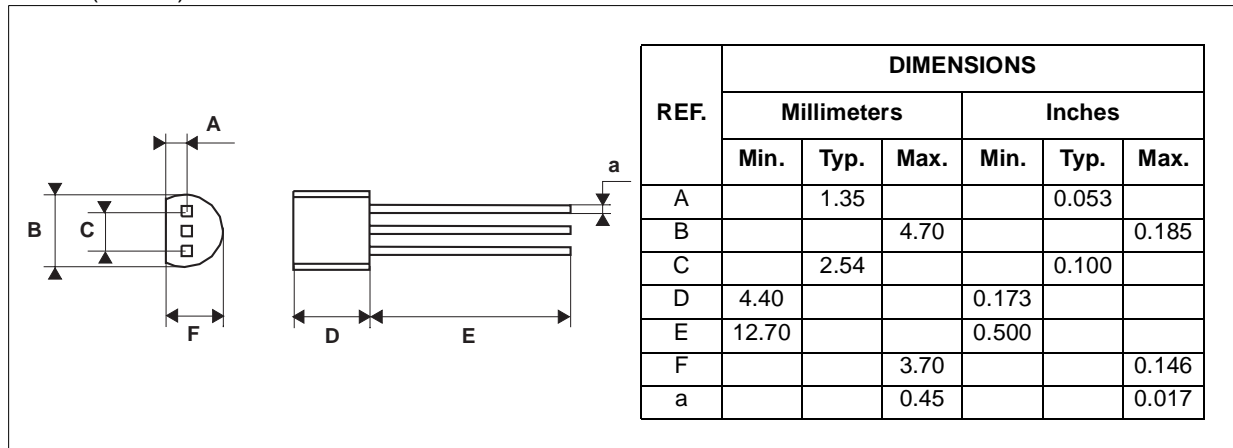


Fig. 8: Relative variation of critical rate of decrease of main current versus $(dV/dt)_c$ (typical values).



PACKAGE MECHANICAL DATA

TO-92 (Plastic)



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